United States
Department of
Agriculture

Investigation and Analysis Report

LOWER SILVER CREEK WATERSHED

Santa Clara County, California

March 1983

SOIL CONSERVATION SERVICE

GB
991
C2.S55
1983i
REF

GB991 C2S55 1983 c.2

INVESTIGATION AND ANALYSIS REPORT

LOWER SILVER CREEK WATERSHED
Santa Clara County, California

Lead Agency: USDA Soil Conservation Service
Local Sponsors: Evergreen Resource Conservation District
Santa Clara Valley Water District

For additional information contact: Eugene E. Andreuccetti, State Conservationist, Soil Conservation Service, 2828 Chiles Road, Davis, California 95616, phone (916) 758-2200.

TABLE OF CONTENTS

Page

RATIONALE FOR FORMULATION

Determination of Without Project Conditions 1
Selection of Combinations of Measures in Alternative Plans 3
Procedure used to Measure Economic and Environmental Values for With Project Conditions for Each Alternative 8

PROBLEMS AND OPPORTUNITIES

Problems 11
Forecasting 13
Special Considerations for Urban Damage 13
Summary of Interview Surveys 15

NATIONAL ECONOMIC DEVELOPMENT

Costs 21
Benefits 23

ENVIRONMENTAL QUALITY 29

COST ALLOCATION 31

COST SHARING 31

APPENDIX

Appendix A--Sample OMB Interview Forms A-1
Appendix B--Summary of the Scaling Process for Plans 1 and 2 . . . . . . B-1

LIST OF TABLES

Table 1--Nonstructural Plan-Benefit and Cost Curves (Plan 1) 5
Table 2--Channel Enlargement Plan-Benefit and Cost Curves (Plan 2) . . . 7
Table 3--Incremental Analysis of NED Plan 9
Table 4--Number of Structures in Flood Plain Without Project 11
Table 5--Flood Damage by Decade Without Project 12
Table 6--Residual Flood Damages by Decade Under Alternative Plans . . . 13
Table 7--Summary of Annualized Benefits and Costs for Alternative Plans 13
Table 8--Comparison of Sensitivity Analyses 14
Table 9--Summary of Damage Interview Responses 16
Table 10--Project Investment 21
Table 11--Annualized Adverse Effects 22
Table 12--Habitat Evaluation of NED Plan 29

RATIONALE FOR FORMULATION

Determination of Without Project Conditions

The without project condition is the land use and related conditions likely to occur under existing improvements, laws, and policies. Listed below are four significant groups of assumptions inherent in this definition.

Existing and Authorized Land Use Plans: From a land use perspective, the most likely future without project land use in the watershed was assumed to be that called for under Santa Clara County's General Plan for 1990 (as amended).

The floodplain area is already about 95 percent developed (urban). An inventory of the existing structures in the floodplain showed that 90 percent of them were between one and 30 years old and the other 10 percent between 30 and 50 years old. The economic life of buildings in the area cannot be documented because most development in the area is relatively new. However, because of the extremely high cost of housing in the area, the lack of developable land, quality of construction, and the mild climate, it was assumed that the existing structures would remain in use throughout the 100-year planning period. Observations made during the inventory process indicated that the older buildings in the floodplain were well-kept and repaired rather than torn down or abandoned.

Undeveloped drainage areas contributing to the floodplain were assumed to be developed according to the land use element of the county general plan. An analysis was performed to determine the impact on the formulation and selection process should this assumption prove erroneous. The results of this analysis indicated that the runoff contributing to the floodplain and the resulting damages would remain essentially the same should these areas not develop. This is because the water conveyance systems that would be installed should these areas develop would not be able to carry the runoff from larger storms and local ponding would occur on the developing sites. During smaller storms, when the water conveyance systems could accomodate the slight increase in runoff, so also could the existing Lower Silver Creek channel. The damages and benefits reported in the watershed plan/EIS result from the larger, more consideration was that the high percentage of renters and low income people residing in the flooded areas would not have the initiative and/or financial resources to assume such an expensive task.

The future without project conditions were based on watershed conditions that are expected to exist in the year 1990, the year in which project installation is scheduled to be completed. No land use projections were made beyond 1990.

Selection of Combinations of Measures in Alternative Plans

Plan 1--Nonstructural Floodplain Protection: The nonstructural plan was developed by first reviewing the floodplain to determine if any minor structural alterations in the channel could be made to appreciably reduce damages. This possibility did not exist as the flooding problems were due to insufficient channel capacity rather than to "bottleneck" type constrictions along the channel. Therefore, formulation began on a totally nonstructural plan.

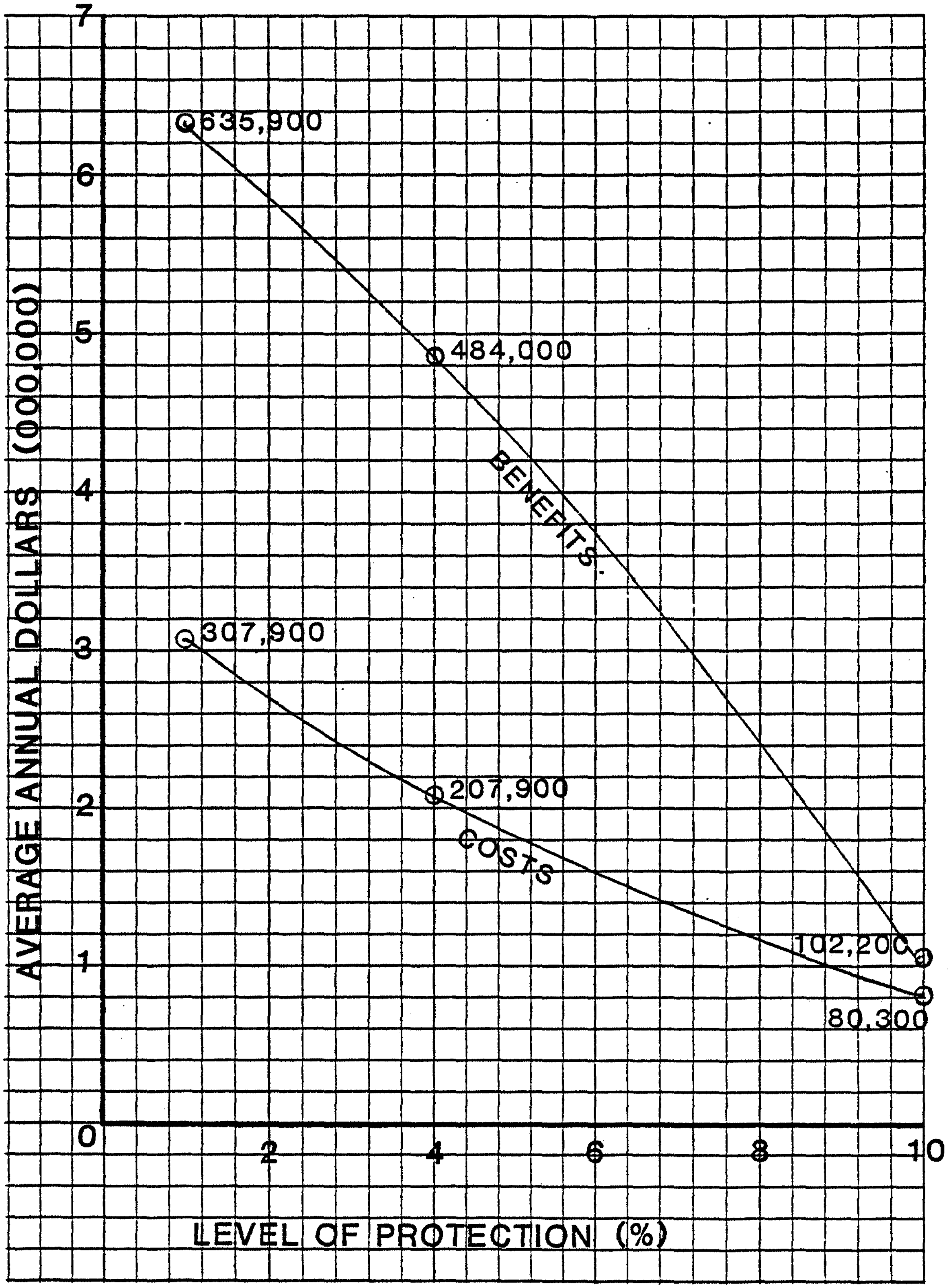
Zoning of the floodplain would not reduce damages or the potential for damages since the floodplain is 95 percent developed. The remaining 5 percent of the area, still to be developed, would be protected by a combination of existing zoning and FIA regulations. Therefore, this method was discarded. Purchases or acquisition of floodplain land were economically infeasible and impractical due to the unavailability of developable land in the area. Land costs range from $3.00 per square foot for residential lots to $7.00 per square foot for commercial lots. The average home is valued at $55,000, excluding the lot.

Relocation of existing homes was feasible for a limited number of homes so this option was retained. Floodproofing measures such as elevating homes, building floodwalls or dikes around properites, and applying waterproof sealant appeared to offer the most potential. A flood warning system was deemed necessary in combination with other measures, but was not analyzed independently.

Economic and engineering evaluation procedures for selecting combinations of measures for the nonstructural plan assumed that groups of homes would be evaluated as units. This assumption was used because of the following reasons:

TABLE 1. NONSTRUCTURAL PLAN

Benefit and Cost Curves[1] used to Identify the Level of Protection Which Maximizes Net Benefits

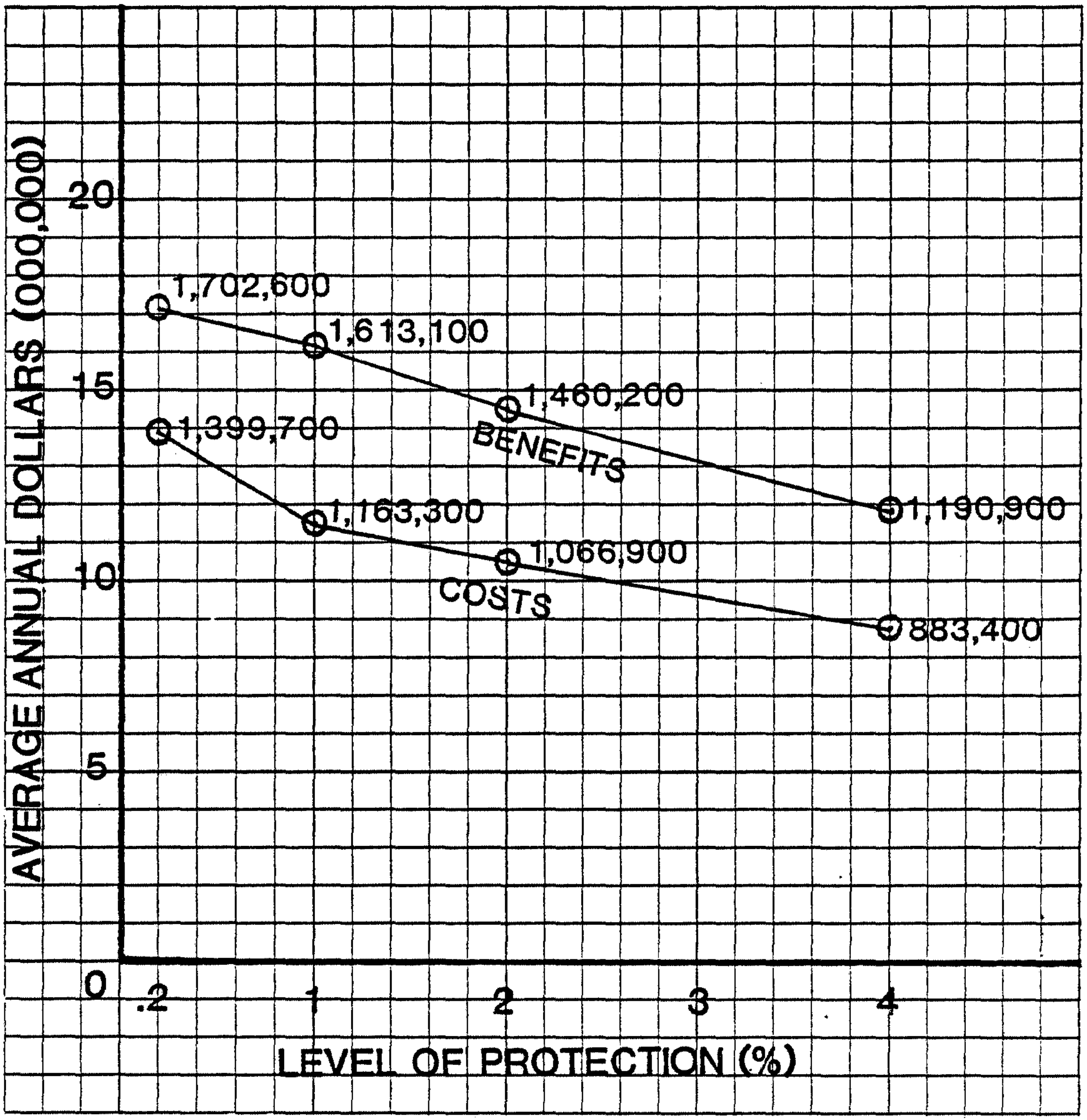


---

[1] Costs do not include interest during construction.

TABLE 2. CHANNEL ENLARGEMENT PLAN

Benefit and Cost Curves[1] used to Identify the Level of Protection Which Maximizes Net Benefits



---

[1] Costs do not include interest during construction.

Incremental Analysis of NED Plan: Table 3 displays the information on incremental analysis.

TABLE 3. INCREMENTAL ANALYSIS OF NED PLAN

Description of Increment	Annual Costs Incremental Cost	 Total Cost	Annual Benefits Incremental Benefit	 Total Benefit	Net Benefits
Channel Work	$1,261,400	$1,261,400	$1,613,100	$1,613,100	$351,700
Nonstructural	1,200	1,262,600	3,200	1,616,300	353,700

PROBLEMS AND OPPORTUNITIES

Problems

Flooding: A thorough description of the flooding problems is presented in the watershed plan/EIS (see Problem and Opportunity Identification section). The following tables supplement and/or summarize the data contained in that report.

TABLE 4. NUMBER OF STRUCTURES IN FLOODPLAIN WITHOUT PROJECT

	Time Period				
Property Type	Existing	1990 (Po)1/	2000	2030	2090
Residential					
Houses	3,420	3,420	3,420	3,420	3,420
Apartments	141	141	141	141	141
Commercial	155	155	155	155	155
Industrial	34	34	34	34	34
Schools and Churches	37	37	37	37	37

1/ The designation Po refers to the beginning of the evaluation period.

Note: Table is the same for both alternatives.

TABLE 6. RESIDUAL FLOOD DAMAGES BY DECADE UNDER ALTERNATIVE PLANS
Applicable Discount Rate: 7-7/8%

	Time Period				
Alternative	1990 (Po)1/	2000	2030	2090	AAE2/
Nonstructural	$1,075,400	$1,123,300	$1,317,400	$1,317,400	$1,147,000
Channel Work and Nonstructural	184,700	191,900	220,500	220,500	195,400

1/ The designation Po refers to the beginning of the evaluation period.
2/ Average Annual Equivalent

TABLE 7. SUMMARY OF ANNUALIZED BENEFITS AND COSTS FOR ALTERNATIVE PLANS
Applicable Discount Rate: 7-7/8%

	Alternative 1	Alternative 2
Flood Hazard Reduction Benefits		
Inundation		
Physical	$635,900	$1,604,700
Emergency	0	11,600
Total Benefits	635,900	1,616,300
Total Costs	328,800	1,262,600
Net Benefits	$307,100	$ 353,700

Biological and Visual: The study results concerning the biological and visual problems are presented in the Problem and Opportunity Identification section of the watershed plan/EIS.

Forecasting

A description of all forecasting is contained in the watershed plan/EIS under the Forecasting Conditions and Risk and Uncertainty sections of that report.

Special Considerations for Urban Damage

Because all persons may not agree with some of the assumptions used in this analysis, Table 8 was prepared to compare different benefit levels that could result should different assumptions be employed. Only those key assumptions

Case 4: Same assumptions as listed under the NED Plan except that the OBERS regional growth rate for per capita income is not applicable and therefore the value of residential contents was not projected to increase in the future.

It should be mentioned why no specific analyses are presented for break even years, discount rates, and value per structure. Break even years need not be displayed because both alternatives have a B:C ratio greater than one under existing conditions. No additional analysis needs to be displayed relative to a change in discount rate since the discount rate used in this study was the current applicable rate of 7-7/8 percent. No additional analysis is warranted with respect to the value of structures since no new structures were forecasted to be located in the floodplain over what exists now. Also, the value of the existing structures was not projected to increase.

The without project flood damages, including the 500-year event, and rationale for plan formulation and selection are clearly described in the watershed plan/EIS. The remaining flood damges, including the residual 500-year damages are also described in the Effects section of that report.

Summary of Interview Surveys

Flood damage interviews were conducted with floodplain residents using OMB-approved forms (Appendix A). A summary of the responses is contained in Table 9.

Table 9 (cont.)

INTERVIEW NUMBER	TYPE	MARKET VALUE	CONTENT VALUE	% OF CONTENT VALUE/ MARKET VALUE	1 FT. FLOODING		3 FT. FLOODING		5 FT. FLOODING	
					$	% OF CONTENT VALUE	$	% OF CONTENT VALUE	$	% OF CONTENT VALUE
12	Gas Station	63500	41000	64.57	16000	39.0	-	-	-	-
40	Appliance	148300	50000	33.7	40000	80.0	50000	100	50000	100
37	Auto Parts	165000	150000	91.0	75000	50.0	120000	80.0	150000	100
39	Hardware	185400	250000	135	75000	30.0	125000	50.0	200000	80.0
42	Hardware	71100	80000	113	90000	11.0	22000	27.5	30000	37.5
43	Appliance	74600	50000	67.0	45000	90.0	47500	95.0	50000	100
44	Appliance	102200	25000	24.5	25000	100	25000	100	25000	100
45	Hardware	79600	250000	314	50000	20.0	175000	70.0	200000	80.0
46	Hardware	80000	25000	31.3	20000	80.0	22500	90.0	25000	100
14	Hardware	130000	150000	115	75000	50.0	150000	100	150000	100
41	Hardware	30900	450000	1456	45000	10.0	360000	80.0	450000	100
29	Hardware	69300	30000	43.3	22500	75.0	30000	100	30000	100
88	1/	1150000	500000	43.5	450000	90.0	470000	94.0	500000	100
461	1/	482100	185000	38.8	10000	28.6	25000	71.4	35000	100
16	Restaurant	72700	60000	82.5	11000	18.3	15000	25.0	-	-
9	Restaurant	85000	50000	58.8	93000	18.6	11300	22.6	50000	100
10	Restaurant	84000	42000	50.0	15500	36.9	15500	36.9	35000	83.3
91	Retail	61800	5000	8.1	1500	30.0	5000	100	5000	100

Table 9 (cont.)

INTERVIEW NUMBER	TYPE	MARKET VALUE	CONTENT VALUE	% OF CONTENT VALUE/ MARKET VALUE	1 FT. FLOODING		3 FT. FLOODING		5 FT. FLOODING	
					$	% OF CONTENT VALUE	$	% OF CONTENT VALUE	$	% OF CONTENT VALUE
92	Retail	75000	300000	400	15000	5.0	50000	16.7	150000	50.0
93	Retail	60000	5000	8.3	-	-	-	-	-	-
94	Retail	109375	25000	22.9	15000	60.0	20000	80.0	25000	100
35	Retail	92700	100000	108	60000	60.0	10000	100	100000	100
34	Retail	92700	150000	162	15000	10.0	75000	50.0	150000	100
33	Retail	92700	100000	22.9	10000	10.0	25000	25.0	50000	50.0
32	Retail	30900	22500	72.8	5000	22.2	17500	77.8	22500	100
31	Retail	27800	10000	35.9	5000	50.0	10000	100	10000	100
28	Retail	24700	9000	36.4	1800	20.0	4500	50.0	9000	100
27	Retail	139000	210000	141	1000	1.0	11000	52.3	200000	95.0
26	Retail	88400	10000	11.3	5000	50.0	10000	100	10000	100
25	Retail	85000	20000	23.5	5000	25.0	15000	75.0	20000	100
980	Retail	198000	110000	55.6	40000	36.0	60000	54.5	110000	100
75	Industrial	591700	500000	84.6	200000	40.0	250000	50.0	-	-
71	Industrial	104200	75000	71.9	10000	13.3	10000	13.3	10000	13.3
72	Industrial	32300	100000	309.6	70000	70.0	75000	75.0	75000	75.0
73	Industrial	156300	50000	32	50000	100	50000	100	50000	100
74	Industrial	-	850000	-	25000	2.9	850000	100	850000	100

NATIONAL ECONOMIC DEVELOPMENT

Costs

Construction costs for the NED Plan were based on the most recent bids on projects installed under PL-566 for similar situations. Unit costs were developed by excluding the high and low bids and averaging the remaining bids. Costs over 6 months old were brought to present value using the Engineering News Report construction cost index.

Engineering and mitigation costs were estimated by SCS based on past experiences with recent urban projects.

Land rights costs were developed by SCS using data supplied by SCVWD on flood control projects recently completed in the area. The costs were updated if necessary and reviewed by the SCVWD.

Tables 10 and 11 summarize the total project investment and annualized costs of the NED plan. A more detailed breakdown of costs appears in the Recommended Plan section of the watershed plan/EIS.

TABLE 10. PROJECT INVESTMENT

1. Construction Cost	$ 8,903,000
2. Construction Contingency	1,356,000
3. Engineering	624,000
4. Project Administration	1,288,000
5. Wildlife and Visual Mitigation	144,000
6. Land rights costs	1,639,000
7. Interest during construction at rate of 7-7/8%	1,245,000
Total Investment	$15,199,000

Price level 1982
Period of analysis--100 years

Benefits

There are five categories of damage reduction benefits and one savings in future costs category. The following pages describe the source of the base data and the procedures used to evaluate problems and benefits for each of the categories.

1. Reduction of damages to buildings and structures:

Source of base data: The number and location of structures were obtained from a detailed inventory of the floodplain done at the beginning of the study. Because of the large number of structures located in the floodplain (3,787), a representive sample of 1,331 (35 percent) was developed and used to evaluate the with and without project damages and resulting benefits. The market value of structures was obtained from realtors, utilization of the Marshall Swift Appraisal System, and interviews with floodplain residents. Content values were obtained from field interviews. Damage schedules were developed primarily through interviews with floodplain residents. They were supplemented by Flood Insurance Administration data and data contained in the Stanford Research Institute report outlining procedures in estimating flood damages to residential, commercial, and industrial properties in California. First-floor, ground, and curb elevations were obtained by engineering field surveys of the individual properties involved.

Procedures: The type, location, market value, content value, first floor elevation, and damage schedules were combined with hydrologic and hydrology data in the Urban 1 computer program to obtain future without damages and residual damages under various alternatives. Five different storm frequencies were analyzed. From these storms an average annual value was obtained. The difference between the future without and future with alternatives was claimed as benefits. The OBERS regional growth rate for per capita income was used to increase the damageable value of residential contents in the future and therefore the resulting benefits attributed to each alternative.

The elevations used in this evaluation were derived from a combination of the observed locations of vehicles and the house surveys taken. For instance, if a vehicle was parked in the garage during the inventory stage, the ground elevation in front of the residence was used. Damages would not begin until water is at least 12 inches above this elevation.

It was assumed that vehicles parked at apartment, commercial, industrial, church, and school buildings would be evacuated prior to receiving damages. Content values of the vehicles evaluated were assumed to be zero. No projections were made.

3. Reduction in traffic disruptions:

Source of base data: The City of San Jose furnished the data on vehicle trips relating to the nine major roadways impacted by flooding. The city also furnished the types of vehicles, detour routes, time delay estimates, and criteria for road closures. A value of .20¢/mile was used for extra costs resulting from detouring around the floodplain. This value was obtained from the Internal Revenue Service. Monetary values for extra wages were determined by SCS using the average wage scale for truckers in the area ($13.48/hour) obtained from the Employee Development Department, State of California.

Procedures: Working with the City of San Jose, the total number of vehicle trips was determined for each of the nine flooded roadways. This value was adjusted to reflect the estimated length of time the roadway would be closed as well as the time of day it would be closed. This was accomplished using hydrology data furnished by the SCS hydrologist. This procedure yielded a total number of vehicle trips that would be impacted (require rerouting). The city developed a scheme of re-routing the traffic which, combined with the number of vehicles involved, yielded the total number of vehicle miles required to circumvent the floodplain. A value of .20¢/mile was used to obtain an estimate of the extra operating expenses to drivers resulting from a flood event.

Extra wages that would result from delays due to road closures was calculated for commerical truck drivers only. It was assumed that other

The same procedures were used to calculate future with project conditions. The difference between the costs was claimed as benefits.

5. Reduction in emergency services costs:

Source of base data: Basic data was obtained through interviews with the San Jose Office of Emergency Services, the Red Cross, and the San Jose Police Department. A considerable amount of data was available from the spring, 1982 flood in the area.

Procedures: The first step in the analysis was to determine the total number of people requiring evacuation assistance and congregate care. Based on past flood experience, the Red Cross estimated that 20 percent (2,900) of the 14,400 floodplain residents would require emergency assistance during a 100-year flood event.

According to interviews, the main expense items for evacuating residents, providing congregate care, and securing the area were:

1. Cost of getting people to shelters.
2. Cost of operating emergency shelters.
3. Cost of supplying extra police and fire protection.

Summing these costs yielded an estimated cost for the 100-year event. The same procedure was used for two other storm events and an average annual value was attained.

The with project scenario was then evaluated. The residual floodplain served as a basis for determining the total number of people and adjusted by the 20 percent factor to attain the number of people requiring assistance. Total expenses were then caluculated. The difference between the without and with project conditions were claimed as benefits.

6. Savings in future costs:

Source of base data: Using the inventory of structures as a base, interviews with the local flood control agency indicated that the average house

ENVIRONMENTAL QUALITY

The biological and wetland resources within the watershed were inventoried using USGS topographic maps, USFWS wetland maps, aerial photos, the County General Plan (1980), California Department of Fish and Game records, and field surveys. This information was used to produce a habitat map for the watershed.

The California Natural Diversity Data Base, California Department of Fish and Game, USFWS, and San Jose State University were contacted for information in preparing the endangered and threatened species biological assessment.

The local sponsor, SCVWD, conducted a biological resource survey during preparation of their 1978 environmental impact report for the project. Information from this report was also used in the assessment of biological resources.

Standard procedures in TR-65 were used by the landscape architect in evaluating the visual resources along the channel and in determining landscape needs.

Mitigation needs were determined using the evaluation procedures described in the Procedure used to Measure Economic and Environmental Values for With Project Conditions for each Alternative section of this report. The results of the evaluation showed a net decrease of 4.3 HUs with installation of the NED Plan (Table 12).

TABLE 12. HABITAT EVALUATION OF NED PLAN

	Wetlands		Riparian	
	Acres	HUs	Acres	HUs
Without Project	8.5	5.4	29.5	9.4
NED Plan	17.4	4.4	24.9	6.1
Net Difference	+8.9	-1.0	-4.6	-3.3

COST ALLOCATION

This is a single purpose flood prevention project. Therefore, all costs are allocated to flood prevention.

COST SHARING

This NED Plan has structural and nonstructural elements. Cost sharing for the structural element followed the policies and procedures outlined in the National Watersheds Manual Part 506, Subpart G, Cost Sharing. PL-566 funds will pay 100 percent of engineering services, construction costs, and SCS administrative costs. The sponsors will pay 100 percent of landrights and their administrative costs.

The nonstructural elements will be cost shared in accordance with the policies and procedures outlined in National Watersheds Manual Part 505, Subpart B. The local share for the installation of this element is 20 percent of the composite of construction, engineering, and project administration. This amounts to 20 percent of construction costs and all of the project administration costs. PL-566 funds will pay 80 percent of the composite, which amounts to 80 percent of construction costs and all of the engineering costs.

APPENDIX A

SAMPLE OMB INTERVIEW FORMS

FORM APPROVED
OMB NO. 40-R3805
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SCS-WS-2
4-77
FILE CODE WS-14

FLOOD DAMAGE – RESIDENTIAL PROPERTIES

This report is authorized by law (PL-83-566). While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate and timely.

SAMPLE FORM

Watershed ____________________ State ____________

Reach ____________ Interviewer ____________________ Date ________

Occupant ____

Address ______________________________ Years lived here ________

Times residence flooded: No. ____________ Dates ____________________

Date of specific flood event ____________ Hrs. of advance warning received ________

Depth of water in basement ______________________________

Describe source of floodwater (through windows, walls, basement drains, etc.)

Depth of water on or above first floor ______________________________

Depth of water on grounds or lawn ______________________________

Depth of water in garage ______________________________

Depth of water in other buildings ______________________________

Depth of water in automobiles ______________________________

Location of automobiles when flooded

Depth below the above flood at which damages begin ______________________________

SCS-WS-3
JUNE 1972
FILE CODE WS-14

FORM APPROVED
OMB NO. 40-R3808
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

FLOOD DAMAGE--COMMERCIAL--INDUSTRIAL

SAMPLE FORM

Watershed ____________________ State ____________ Reach ____________

Interviewer ______________________________ Date ____________

Type of Business ____________ Address ____________ Owner ____________

Structure:

Construction: Frame ☐ Brick ☐ Metal ☐ Other (specify) ____________

Market Value (do not include land) $ ____________

Size: Basement ________ sq. ft. 1st Floor ________ sq. ft. No. of Floors ________

Value of Contents: (estimated) Basement $ ________ 1st Floor $ ________ 2nd Floor $ ________ Other $ ________

1st Floor Storage (per cent stored in relation to elevation):

0.0 - 1.0 ft. ______ % 1.1 - 3.0 ft. ______ % 3.1 - 5.0 ft. ______ % 5.1 ft. and over ______ %

Number of Employees ________ How Often Do Damaging Floods Occur? ____________

Date of Flood ____________ Type of Flood: Backwater ☐ Flowing ☐

Depth of Flood: Grounds ______ ft. Basement ______ ft. 1st floor ______ ft. 2nd Floor ______ ft.

	Estimated Damages (Dollars)			Remarks
Grounds – Parking lots, walks, signs	XXX	XXX	$	(Loss prevented by evacuation, emergency preparations, etc.)
Lawns, shrubs	XXX	XXX		
Structure – Foundation	XXX	XXX		
Walls	XXX	XXX		
Other	XXX	XXX		
Contents --(Stock)	Basement	1st Floor	Other	
Merchandise	$	$	$	
Equipment				
Records				
Misc. (specify) ________				
Other – Loss of Business	XXX	XXX	$	
Evacuation-Reoccupation	XXX	XXX		
Flood proofing	XXX	XXX		
Employee Wages Lost	XXX	XXX		
Misc.	XXX	XXX		
Totals	$	$	$	
TOTAL LOSS FOR FLOOD				$

Estimated Damages at Higher or Lower Stages Than This Flood

Higher 1′ $ ________ 2′ $ ________ 3′ $ ________ 4′ $ ________ 5′ $ ________

Lower 1′ $ ________ 2′ $ ________ 3′ $ ________ 4′ $ ________ 5′ $ ________

APPENDIX B

SUMMARY OF THE SCALING PROCESS FOR PLANS 1 AND 2

PLAN 1. NONSTRUCTURAL PLAN[1/]

Level of Protection	Benefits	(Increase in Benefits)	Costs	(Increase in Cost)	Total Net Benefits	(Increase in Net Benefits)
10-year	$102,200		$ 80,300		$ 21,900	
		$381,800		$127,600		$254,200
25-year	484,000		207,900		276,100	
		151,900		100,000		51,900
100-year	635,900		307,900		328,000	

PLAN 2. CHANNEL ENLARGEMENT PLAN (WITHOUT NONSTRUCTURAL INCREMENT)[1/]

Level of Protection	Benefits	(Increase in Benefits)	Costs	(Increase in Cost)	Total Net Benefits	(Increase in Net Benefits)
25-year	$1,190,900		$ 883,400		$307,500	
		$269,300		$183,500		$ 85,800
50-year	1,460,200		1,066,900		393,300	
		152,900		96,400		56,500
100-year	1,613,100		1,163,300		449,800	
		57,000		236,400		-179,400
500-year	1,670,100		1,399,700		270,400	

[1/] Costs shown do not include interest during construction.